

## REMARKS

Claims 1-22 have been previously cancelled without prejudice. Claims 23-34 have been previously added to replace claims 11-22. By this amendment, Applicants have introduced the saccharide composition of laminarin in claim 23 (support can be found, e.g., in §[0015] of the description). Applicants submit that the present application overcomes the prior rejections and has been placed in condition for allowance for the reasons as set forth below.

### Claim objections

#### Rejection under 35 USC § 103

In the Official Action, the sole rejection of Claims 23-34 was under 35 U.S.C. 103(a) as being unpatentable over the Tsuzuki et al. reference in view other Fan et al. reference. This rejection is respectfully traversed for the reasons set forth below.

In support to the argumentation of the Applicants, a copy of page 914 of the 12<sup>th</sup> edition of the Merck Index (1996) concerning laminarin is respectfully submitted.

According to the Merck Index, laminarin is composed of  $\beta$ -(1,3)-linked glucose residues; may contain small amounts of  $\beta$ -(1,6) linkages, and is composed of **more than 90%** of polyglucose.

The Merck Index is a world wide recognized scientific encyclopedia of chemicals, drugs and biologicals and the definitions contained therein are uncontested by the scientific community. Accordingly, the compound as defined in claim 1 is necessarily laminarin since it consists essentially of glucopyranose units (i.e., it is comprised of more than 90% of polyglucose) linked and branched as defined in the Merck Index.

To the contrary, a compound containing only 60% of sugar **cannot** be considered as laminarin by the scientific community.

Hence, the molecule described by Fan et al., even if it is named laminarin, is **not** laminarin and relates to a different molecular entity. Accordingly, the Fan et al. reference has to be considered as relating to an **undefined** molecule containing 60% of sugar and extracted from *Laminaria japonica*.

This being said, the arguments submitted in our previous responses are herein below summarized.

Tsuzuki et al. examined the relationship between the conformation of Sonifilan (SPG) and hematopoietic responses in cyclophosphamide-induced leukopenic mice. As indicated in Professor Vaclav Vetvicka's declaration under Rule 132 (copy already furnished), Sonifilan is a polysaccharide produced by the fungus *Schizophyllum commune*, whereas laminarin is a polysaccharide produced by the brown algae. Furthermore, these two glucans have a different molecular weight and conformation. These two glucans can thus not be directly compared. The results obtained with Sonifilan cannot be obviously extrapolated to Laminarin, and *vice versa*.

Fan et al. disclose the activity of an **undefined molecule** containing 60% of sugar, having a molecular weight of 40,000, and extracted from *Laminaria japonica*.

As previously mentioned by the Applicants, and in contrast with the undefined molecule of Fan et al., laminarin according to claim 1 has a molecular weight from about 2,500 to about 6,000, which constitutes a difference of about 10 fold. However, according to the Examiner, the "use of laminarin of different molecular weights depends on factors such as type, and/or severity of the leukopenia caused by said treatment". In addition to the fact that the behaviour of molecules having highly different molecular weights (about 10 fold) is totally unpredictable, in the present case, the molecule of Fan et al. and the laminarin of claim 1 not only have highly different molecular weights but also a completely different sugar composition.

Indeed, it is admitted in the scientific community that it is impossible to foresee the pharmacologic properties of a molecule: a small difference in a molecule may change its biological activity. Here, the molecules disclosed in the Tsuzuki et al. and Fan et al. references are totally different from laminarin, at least in terms of molecular weight and sugar composition, as evidenced by the Merck Index and paragraphs [0014] and [0015] of the pending application.

Accordingly, none of the cited references discloses, teaches, suggests, or makes obvious in any way neither laminarin nor its strong stimulating activity on the regeneration of the cells after an antineoplastic treatment.

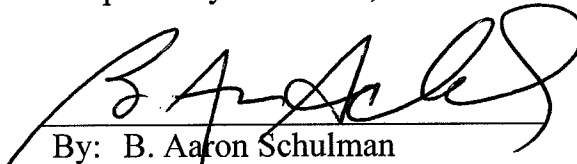
Consequently, the data disclosed in Fan et al. taken alone or in combination with Tsuzuki et al. can in no way make the claimed invention obvious.

From the foregoing remarks, it is clear that the instant invention as defined in claims 23-34 is non obvious over the cited prior art. Thus, the Examiner's rejection under 35 U.S.C. §103 on the basis of the cited references is respectfully traversed and should be withdrawn.

In view of the above amendments and remarks, Applicants respectfully submit that the claims are in condition for allowance. A Notice of Allowance is therefore respectfully solicited. Should the Examiner believe that a discussion with the undersigned counsel would expedite prosecution of the application, a telephone call to (703) 739-4900 would be welcomed.

Respectfully submitted,

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